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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/787,316	03/16/2001	Ola Olsvik	2001-0269A	7963

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EXAMINER

LANGEL, WAYNE A

ART UNIT	PAPER NUMBER
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1754

DATE MAILED: 12/31/2002

5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

787316

Applicant(s)

Olsvik et al

Examiner

Langel

Group Art Unit

1754

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- ☐ Responsive to communication(s) filed on _____
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-20 is/are pending in the application.
- Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-20 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).

☒ All ☐ Some* ☐ None of the:

- ☐ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. _____

☒ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s) 4
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

Office Action Summary

Art Unit 1754

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-16 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Smith et al. No distinction is seen between the process disclosed by Smith et al., and that recited in claims 1-16. Smith et al. disclose a process for generating hydrogen by contacting a hydrocarbon with steam and/or oxygen to produce an effluent gas which is passed to a shift conversion zone wherein carbon monoxide is reacted with water to produce carbon dioxide and hydrogen, followed by separating the resulting carbon dioxide and hydrogen. (See column 3, line 48 - column 4, line 59.)

Art Unit 1754

Smith et al. suggest at column 3, lines 48-50 that both steam and oxygen are introduced to hydrogen generation zone 4 via line 2. Accordingly the natural gas and water would be fed to the reforming reactor of Smith et al. under the supply of an oxygen containing gas.

Claims 17-20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Smith et al. The uses of the hydrogen recited in these claims is conventional. It would be prima facie obvious to employ the hydrogen produced according to the process of Smith et al. for such conventional uses.

Claims 1-16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Clawson et al. '425 in view of either Krishnamurthy et al. or Smith et al. Clawson et al. '425 disclose a method for converting hydrocarbon fuel into hydrogen gas and carbon dioxide by passing natural gas, water and oxygen to a reforming reactor to produce synthesis gas, and shifting the synthesis gas to increase the amounts of carbon dioxide and hydrogen by reaction with water. (See column 1, line 60 - column 3, line 19.) The difference between the process disclosed by Clawson et al. '425, and that recited in applicant's claims, is that Clawson et al. '425 does not disclose that the gas stream from the shift reactor should be separated in a separation unit into a carbon dioxide-rich and a hydrogen-rich gas stream, respectively. Smith et al. and Krishnamurthy et al. both

Art Unit 1754

disclose the production of carbon dioxide and hydrogen, including the step of separating the hydrogen from the carbon dioxide, wherein the hydrogen and carbon dioxide are produced by steam reforming of hydrocarbon. (See column 3, line 38 - column 4, line 59 of Smith et al., and the paragraph bridging columns 2 and 3 of Krishnamurthy et al.) It would be prima facie obvious from either Smith et al. or Krishnamurthy et al. to separate the gas stream of Clawson et al. '425 in a separation unit into a carbon dioxide-rich and a hydrogen-rich gas stream, respectively, since Smith et al. and Krishnamurthy et al. both suggest that hydrogen and carbon dioxide are useful gases in and of themselves, and should be separated for certain purposes. Moreover, Krishnamurthy et al. suggest at column 1, lines 5-8 that the process disclosed therein is useful for the production of high purity gaseous hydrogen and liquid carbon dioxide from any gas mixture containing them, which would include the gas mixture of Clawson et al. '425. Also, Smith et al. disclose in Figure 1 that both steam and oxygen may be supplied via line 2 into hydrogen generation zone 4 along with the hydrocarbon, so that the process of Smith et al. is analogous to the process recited in applicant's claims with respect to the fact that a hydrocarbon is reacted with both steam and oxygen to produce the raw synthesis gas.

Claims 17-20 provide for the use of hydrogen or oxygen, but, since the claims do not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claims 17-20 are rejected under 35 U.S.C. § 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. § 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claims 1-16 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 1, it is indefinite as to whether the recitation of "under supply of an O₂-containing gas" would mean that an oxygen-containing gas is passed to the reforming reactor. Also in claim 1, the spelling of "reactor" and "gas" should be corrected. In claim 16, it is indefinite as to what process step would be involved in the recitation of "at least a part of N₂ follows the CO₂-rich gas stream".

Art Unit 1754

Clawson et al. '122 is made of record for disclosing a process for producing carbon dioxide and hydrogen by reforming a hydrocarbon fuel by reacting the hydrocarbon fuel with oxygen and steam, followed by shift conversion.

The other references are made of record for disclosing the production of carbon dioxide and hydrogen, wherein the carbon dioxide and hydrogen are produced by either steam reforming of a hydrocarbon or partial oxidation of a hydrocarbon.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Wayne A. Langel whose telephone number is (703) 308-0248. The examiner can normally be reached on Monday through Friday from 8 A.M. to 3:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can be reached on (703) 308-3837. The fax phone number for this Group is (703) 305-7718.

WAYNE A. LANGEL
PRIMARY EXAMINER

Serial No. 09/787,316

-7-

Art Unit 1754

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-2351.

WAL:cdc

December 26, 2002

Wayne A. Langel
WAYNE A. LANGEL
PRIMARY EXAMINER